Weiyuan Ding

+1 9843104322 thefatblue@gmail.com github.com/TheFatBlue

Education

Peking University **Sept. 2020 – July 2024**

Bachelor of Science in Information and Computing Science GPA: 3.187/4.000

North Carolina State University **Aug. 2024 – May 2026**

Master of Computer Science

Relevant Coursework

- Computer Vision
- Introduction to Computer Systems
- Algorithm Design and Analysis
- Probability Theory and Statistics
- Operating System
- Introduction to Database Systems

Professional Experience

Beijing Baidu Netcom Science Technology Co., Ltd. **May 2023 – August 2023**

Computer Vision Algorithm Intern Peking, China

- Participated in the Text-to-Image Generation Project with focus on images and text processing for training purposes.
- Assisted in improving the team's **unified data format**, facilitating easier data management, and contributed to the development of data capture and processing pathways.
- Employed modified GAN and SD algorithms to generate diverse training data, facilitating the development of models capable of producing **stylized** images and specialized data sets.

Projects

Monocular Depth Estimation for Neuromorphic Cameras | *Bachelor Thesis* **May 2024**

- Developed a novel depth estimation model using the **Spike Transformer** to process irregular pulse data generated by neuromorphic cameras.
- Enhanced the model's decoder architecture, improving depth prediction accuracy on dynamic scenes.
- Trained and tested the model on the **PKU-Spike-Stereo** dataset, achieving higher accuracy compared to traditional models when handling asynchronous pulse streams.
- Project available at: https://github.com/TheFatBlue/Spike-MonoDepth/tree/main

Enhanced Reading Experience for the Visually Impaired | *Collaborative Research* **Dec. 2022**

- Collaboratively designed a **complete pipeline** to transform scanned books into full-text formats with descriptive illustrations, aiming to enhance the reading experience for visually impaired individuals.
- Created a training dataset with over **400** images and paired textual descriptions using ten books marked with manual guidelines for this purpose.
- Optimized the book processing workflow, considering the unique characteristics of the books to accelerate the process.
- Enhanced the adaptation capability of the ClipCap model to better describe images with diverse styles, improving the accuracy and relevancy of descriptions for different types of illustrations.
- Report available at: https://github.com/TheFatBlue/Human-compatibleCV/blob/main/human_compatible_cv.pdf

Research Experience

Autonomous Driving Generalized Perception Research **June 2022 – Sept. 2022**

Research Intern under Professor Shanghang Zhang

- Conducted research on papers and algorithms related to autonomous driving perception, with a primary focus on Bird's Eye View (BEV) aspects, and presented analyses in weekly meetings.
- Replicated existing related work and evaluated performance costs.
- Tested and verified relevant hypotheses on the NuScenes dataset.

Technical Skills

Languages: Python, C/C++, JavaScript, SQL(MySQL)
Developer Tools: Vim, VS Code, PyCharm, CLion, Xcode, Google Colab
Technologies/Frameworks: Linux, MacOS, Git, PyTorch
Other: LaTeX, Markdown, Bash